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EXAMINER

MITCHELL, JASON D

ART UNIT

PAPER NUMBER

2193

DATE MAILED: 05/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/067,831

Applicant(s)

TUMATI, PRADEEP

Examiner

Jason Mitchell

Art Unit

2193

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/05/2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This application claims priority to U.S. provisional application 60/302,420 filed on 07/02/2001.
2. At Applicant's request claims 1, 6, 11-13, 15-20, 23, 25, 31 and 37 are amended. Claims 1-38 are pending in this case.

Claim Rejections - 35 USC § 112

Applicant's amendments were sufficient to overcome the 112 rejections, and consequently the rejections are withdrawn.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-38 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,359,730 to Marron (Marron).**

Regarding Claims 1, 8, 14 and 32: Marron discloses a computerized system embodied in a computer readable medium for modifying a target software application segmented into first version grains (col. 7, lines 1-3 'the change modules'), comprising: a set of computer readable instructions embodied in said computer readable medium for: receiving a hot pack (col. 6, lines 50-59 'the new programs are created') having a

Art Unit: 2193

dictum (col. 6, lines 50-59 'machine readable change-instructions') and a second version grain (col. 6, lines 50-59 'new programs') associated with at least one of said first version grains (col. 6, lines 50-59 'modifying the old programs'), opening said hot pack (col. 7, lines 49-51 'store load modules ... and change-instructions ... in program library'), suspending said target software application (col. 7, lines 34-40 'Safety points can be in the old program ... places the process in a wait state'), determining the status of said dictum (col. 8, lines 32-35 'to determine ... whether program A or program A' should be executed'), modifying at least one of said first version grains of said target software application (col. 8, lines 49-52 'storing in such address pointers to the new code') according to said second version grain and said dictum of said hot pack if said determination of said status of said dictum allows for its immediate modification, (col. 8, lines 43-44 'determines if all process are safe') and, resuming execution of said target software application so that modification of said target software application is achieved without halting its execution (col. 8, lines 32-37 'pass control to the ... program for execution').

Regarding Claims 20 and 26: Marron discloses a method and system for modifying a target software application segmented into first version grains (col. 7, lines 1-3 'the change modules') with each of the first version grains having associated crumbs (col. 7, lines 9-11 'safety point') with the associated crumbs having an active and inactive state (col. 8, lines 32-35 'determine ... whether program A or program A' should be executed'), comprising the steps of: providing a hot pack (col. 6, lines 50-59 'the new programs are created') having a dictum (col. 7, lines 49-51 'store load modules ... and

Art Unit: 2193

change-instructions ... in program library') and a second version grain (col. 6, lines 50-59 'new programs'), suspending said target software application (col. 7, lines 36-40 'places the process in a wait state'), determining the status of said dictum (col. 8, lines 32-35 'to determine ... whether program A or program A' should be executed'), modifying at least one of said first version grains of said target software application according to said second version grain and said dictum of said hot pack (col. 8, lines 49-52 'storing in such address pointers to the new code') if said determination of said status of said dictum allows for its immediate modification (col. 8, lines 43-44 'determines if all process are safe'), and, resuming execution of said target software application so that modification of said target software application is achieved without halting its execution (col. 8, lines 32-37 'pass control to the ... program for execution').

Regarding Claim 2, 9, 15, 21, 27 and 33: The rejections of claims 1, 8, 14, 20, 26 and 32 are incorporated, respectively; further Marron discloses triggering performance of a validity operation (col. 8, lines 5-9 'installs traps ... at all safety points') according to said dictum so that data and functional integrity is maintained within said target software application (col. 7, lines 3-11 'conditions which must be satisfied when processes can ... start executing the new program ... deemed to be "safety points"') subsequent modification of said target software application (col. 8, lines 5-9 'installs traps').

Regarding Claim 3, 10, 16, 22, 28 and 34: The rejections of claims 1, 8, 14, 20, 26 and 32 are incorporated, respectively; further Marron discloses copying said second version grain (col. 7, lines 55-58 'loads copies of the new programs ... into memory') within said

address space of said target software application (col. 8, lines 49-52 'storing in such addresses pointers to the new code').

When copying to an address space it is necessary to resize that address space if the object being copied is larger than the available memory. Therefore by copying said second version grain into the address space of the target software application Marron inherently discloses resizing the address space of said target software application according to said hot pack.

Regarding Claim 4, 11, 17, 23, 29 and 35: The rejections of claims 1, 8, 16, 20, 26 and 32 are incorporated, respectively; further Marron discloses copying said dictum into said address space of said target software application (col. 7, lines 61-66 'creates a change descriptor ... in memory').

When copying to an address space it is necessary to resize that address space if the object being copied is larger than the available memory. Therefore by copying said dictum into the address space of the target software application Marron inherently discloses resizing the address space of said target software application according to said hot pack.

Regarding Claim 5, 12, 18, 24, 30 and 36: The rejections of claims 1, 8, 14, 20, 26 and 32 are incorporated, respectively; further Marron discloses at least one crumb (col. 8, lines 5-9 'installs traps') associated with at least one of said first version grains (col. 8, lines 5-9 'at all safety points') having an active and inactive state (col. 8, lines 32-35 "determine ... whether program A or program A' should be executed"), and, said computer readable instructions include instructions for activating said associated

Art Unit: 2193

crumbs (col. 8, lines 32-35 'determine from the safety status') upon the determination that said status of said dictum associated with said first version grain does not allow for its immediate execution (col. 7, lines 52-52 'initially marks all process and tasks as "unsafe"').

Regarding Claim 6, 13, 19, 25, 31 and 37: The rejections of claims 5, 12, 18, 24, 30 and 36 are incorporated, respectively; further, Marron discloses when encountering said crumb in an active state: suspending said target software application (col. 8, lines 12-14 'a trap can ... cause an interrupt'); determining whether said dictum associated with said active crumb can be executed (col. 8, lines 32-35 "determine ... whether program A or program A' should be executed"); modifying said first version grain according to said second version grain and said dictum (col. 8, lines 49-52 'storing in such address pointers to the new code') if said determination of whether said dictum can be executed is affirmative (col. 8, lines 43-44 'determines if all process are safe'), and resuming execution of said target software application so that said target application is modified without halting its execution (col. 8, lines 36-37 'pass control ... for execution').

Regarding Claim 7 and 38: The rejections of claims 6 and 37 are incorporated, respectively; further Marron discloses adding at least one crumb to at least one of said first version grains that are to be modified according to said hot pack (col. 8, lines 5-9 'installs traps').

Response to Arguments

5. Applicant's arguments filed 2/22/05 have been fully considered but they are not persuasive.

In the first and second paragraphs on pg. 17 Applicant states:

Marron does not anticipate "first version grains."

The Office Action states that Marron anticipates "first version grains" by reference to "change modules" ... However, Marron does not segment an existing software application in to grains as in the pending application, but Marron contemplates and discloses the replacement of entire modules and programs.

Examiner respectfully disagrees. The claims do not seem to recite any limitations regarding the size of the segments. Further in lines 10-11 on pg. 14 of Applicant's Specification, Applicant states 'Grains delineate the source code ... into discreet segments of specific statements 15d, function 15b, or the entire program unit 15a'.

While Marron discloses the replacement of entire modules and programs, it is clear that this is within the scope of the instant claims. Accordingly it is Examiner's contention that Marron does disclose "first version grains" as claimed in the instant application.

In the first paragraph on pg. 18, Applicant states:

Marron does not anticipate the hot pack since "new modules" as stated in Marron do not contain grains.

Examiner respectfully disagrees. As indicated above "modules" appear to be within the scope of what the instant application describes as "grains", and accordingly it is Examiner's position that Marron does anticipate the "hot pack".

In the last paragraph on pg. 19, Applicant states:

Art Unit: 2193

"First version grains" are segments of the target software application and are not entire old programs. Specifically, the pending application contains the following:
"Grains delineate the source code and object code into discreet segments...."

Examiner respectfully points out that, as noted above, the claims do not limit the size of the segments. Further, Applicant's citation goes on to state "...of specific statements 15d, function 15b, or the entire program unit 15a". Accordingly it is examiner's position that Marron's "old/new programs" read on Applicant's "first/second version grains".

Applicant goes on to state:

The phrases "new program" and "old program" do not anticipate "first version grains" and "second version grains" since Marron does not claim or disclose segmenting a target software application into grains.

The claims do not require the explicit step of segmenting the target software, but instead only require that the target software is segmented, which, in light of the definition of a grain (i.e. 'function' or 'the entire program unit'), is inherent in any software code. Therefore it is Examiner's position that Marron's "new program" and "old program" anticipated the "first version grains" and "second version grains" of Applicant's claims.

In the second paragraph on pg. 20 Applicant states:

A "second version grain" of the present invention is a segment of the target software application and does not execute independent of the target software application. Therefore, Marron does not claim or disclose a second version grain, only the new program or module.

The claims do not include a limitation that a "second version grain" be a segment of an application or that a "second version grain" be incapable of execution. Further,

Art Unit: 2193

Examiner respectfully points to Applicant's disclosure regarding the segmentation of version grains (pg. 14, lines 10-11 'or the entire program unit'). As a result of this disclosure it is apparent that the "second version grain" could in fact execute independently, and consequently it is Examiner's position that Marron's new program or module would anticipate Applicant's second version grain.

In the paragraph that bridges pg. 20 and 21 Applicant states:

The Office Action states that Marron's use of the phrase "placing the process in a wait state" anticipates the suspension of the target software application ... However, the language of Marron does not discuss the target software application but refers to the process that would be calling or executing the target software application. ... Therefore, this "wait" state of Marron means that the process that is to call the old or new program and must wait to see if it is "safe" to call the new program. Marron does not claim or disclose the suspension of the target software application so that the first version grains can be modified according to second version grains.

Examiner respectfully disagrees. In col. 7, lines 34-36, Marron discloses 'Safety points can be in the old program' thereby indicating that the 'Safety point' which holds the cited 'wait instruction' could in fact be part of target software application. Therefore Marron's 'wait' does place the target software in a suspended state.

In the paragraph that bridges pages 21 and 22 Applicant states:

The Office Action states that "determining the status of said dictum" is anticipated by Marron's language, "to determine ... whether program A or program A' should be executed." In Marron, the new program A' needs to have been created, compiled, installed and existing on the mainframe multiprocessor operating system prior to the determination as to whether program A or program A' can be executed. Marron merely explains that a decision must be made as whether to execute program A or A' (old or new). This language does not anticipate the determination as to whether to modify the first version grain according to a second version grain.

Art Unit: 2193

First, while Examiner agrees that program A' exists on the mainframe at the time of the determination, the claims make no limitations regarding the storage location of said second version grain prior to modification of the first version grain. Secondly, in Marron's invention the new program A' is not installed at the time the determination is made (col. 7, lines 55-58 'new programs are initially "hidden" from the rest of the system'). And Thirdly, the determination of 'whether program A or program A' should be executed' is made on the basis of 'the safety status' (col. 8, lines 32-35), the 'safety status' is determined by 'specific conditions and events which make each task eligible to be "safe"' (col. 7, lines 61-66), and these 'specific conditions' are included in the 'change instructions' (col. 7, lines 61-66). Therefore the determination is based on the status of the dictum or in Marron's language 'change instructions'. Finally, the modification of the first version grain (col. 8, lines 49-52 'The switching over to the new programs is done by locating ... arrays of addresses that point to the old code and then storing in such addresses pointers to the new code') is done based on this determination (col. 8, 44-46 'step 62 determines if all the processes are safe ... switches over to the new programs').

In the paragraph bridging pages 22 and 23 Applicant states:

The Office Action states that Marron anticipates suspending the target software application by Marron's language "pass control to the ... program for execution".

Examiner respectfully disagrees. The language cited is not intended to anticipate this limitation. "pass control to the ... program for execution" is simply intended to indicate that Marron's invention continues processing after the update has been completed. The

Art Unit: 2193

limitation of suspending the target software application is mapped to Marron's col. 7, lines 36-40 'places the process in a wait state' as discussed above.

In the paragraph bridging pages 23 and 24 Applicant states:

Safety points are defined in Marron as "conditions [that] can be translated into events in the life of a task, or the combination of an event with an observable state of the process" (Marron, col. 7, lines 7-9). Crumbs, however, are physical locations within a grain that can be used to determine when the execution pointer hits a predetermined point in the execution of the target software application.

Examiner respectfully disagrees. First, the claims recite no limitation that Crumbs have physical locations. Secondly implementation of Marron's 'safety points' would necessarily include code at a 'physical location' within the program (col.7, lines 14-15 'entering or exiting a particular module') and such code would then be used to determine when the execution pointer hits a predetermined point (col. 7, lines 38-39 'a safety point trap').

Applicant goes on to state:

Marron's "safety points" do not anticipate crumbs because crumbs are locations in the target software application that can allow dictums to be evaluated once reached by the execution point. Therefore, the "safety points" of Marron does not anticipate crumbs.

Examiner respectfully disagrees. As Marron discloses in the paragraph located on lines 25-40 and 61-66 of col. 7, and discussed above, Marron's "safety points" are integrally involved in determining if the new program or module is 'safe' (i.e. evaluating the dictum) and consequently anticipate the claimed Crumbs recited in the instant application.

For the reasons stated above and those made of record in the first action, the 102(b) rejections of claims 1-38 are maintained.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

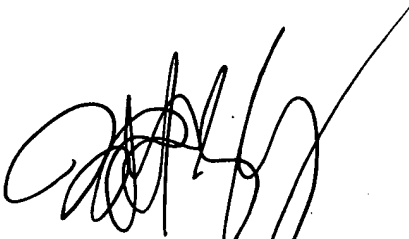
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Mitchell whose telephone number is (571) 272-3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2193

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Mitchell
4/5/05



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PRIMARY EXAMINER